

**REMARKS**

Claims 1-9, 11, and 12 are pending in the application.

Initially, the Examiner is respectfully requested to indicate that the drawings submitted on July 14, 2004 have been accepted.

**I. Response to Rejection of claims 1-9 and 11-12 under 35 U.S.C. § 103(a)**

Claims 1-9, 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshimura et al. (US 6,081,632) in view of JP 2002-356615 (JP '615").

Applicants respectfully traverse the rejection.

Yoshimura discloses that "[u]pon development after local insolubilization (curing) of the photosensitive material, the material remains in the form of a waveguide. At that time, after development, the cavities may be filled with a low refractive index material." The Examiner appears to rely on this disclosure as teaching removing, for example, material including photosensitizer from the optical path.

In claim 1, the optical path is formed from through the resin composition. In addition, claim 1 recites that the 1,4-dihydropyridine derivative is removed from the resin composition after formation of the optical path (removal of the 1,4-dihydropyridine derivative is not limited to irradiated or non-irradiated areas). In contrast, in Yoshimura, the resin material itself is removed. Thus, Yoshimura does not disclose that the photosensitizer is removed from the resin material, as claimed.

In addition, neither Yoshimura nor JP '615 discloses, teaches or suggests that utilizing the structural change of the 1,4-dihydropyridine derivative by light irradiation, a difference in terms of ease of removal of the derivative is caused between irradiated part and a non-irradiated part or that a difference in refractive index between the irradiated part and the non-irradiated part is obtained by removal of the derivative."

Furthermore, one of ordinary skill in the art would not be motivated to combine the references to arrive at the present invention.

First, Applicants do not admit or concede that it would have been obvious to combine Yoshimura '632 and JP '615.

Second, as discussed above, Yoshimura does not disclose that the polyimide epoxy resins are removed from the resulting composition by heating. Thus, the photosensitive material which has not been structurally changed has not been removed from the waveguide. JP '615 refers to a photosensitive polyimide precursor composition. Optical waveguide materials manufactured of said polyimide precursor exhibit a good transparency as well as a good heat resistance, but JP '615 is silent on the above mentioned technical problem underlying the present invention. That is, the technical problem underlying the present invention is the provision of a method of producing an optical waveguide, whereby the optical path formation, the refractive index difference between irradiated paths (and optical path) and the non-irradiated path simply can be adjusted. *See pages 42-43.*

Moreover, JP '615 does not disclose that the polyimide precursor has a refractive index difference between an irradiated part and a non-irradiated part and that the difference between the refractive indices can simply be adjusted when the 1,4-dihydropyridine derivative is removed. Additionally, JP '615 does not teach that the afore-mentioned effect can be achieved when the 1,4-dihydropyridine derivative is compounded with a resin thereby forming a resin composition.

Thus, one of ordinary skill in the art would not arrive at the present invention based on the combination of Yoshimura and JP '615. That is, even if the references were somehow combined, the combination would not result in the removal of the unreacted 1,4-dihydropyridine derivative from the resulting resin composition after inducing a structural

change of the 1,4-dihydropyridine derivative.

The Examples of the present application shows that the process of claim 1 solves the technical problem underlying the present invention and demonstrates the connection of several optical devices which are especially glass fibers, whereby the connection loss is very low when said optical fibers have been connected by the process according to the present invention.


For at least the above reasons, it is respectfully submitted that the present invention according to claim 1 is patentable over Yoshimura and JP '615. In addition, claims 2-9 and 11-12 depend from claim 1, and thus, it is respectfully submitted that these claims are patentable for at least the same reasons as claims 1 and 11.

Accordingly, withdrawal of the foregoing rejection is respectfully requested.

**II. Conclusion**

In view of the above, reconsideration and allowance of claims 1-9 and 11-12 is respectfully requested. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below. The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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